Appendix G

Examples of Completed Hazard Evaluation Table

Note: These are only examples. Other formats are equally acceptable. The only requirement is to capture, in an easily understood form, the following information:

- Event number [designators may include an alphanumeric indicator for event category (e.g., spill, fire, explosion, earthquake) to assist in subsequent sorting].
- Hazards involved.
- Location.
- Postulated event description.
- Causes/Initiators (e.g., failure, error, operational/environmental condition that initiated event).
- Unmitigated risks (no barriers or controls to reduce the consequences).
- Preventative design and administrative features.
- Mitigative design and administrative feature.
- Qualitative probabilities/frequency estimates.

Example of a Hazard Evaluation Table

Hazard Summary					Controls		Event Rankings			Notes
Event	**Location**	**Hazard**	**Scenario**	**Cause**	**Preventive Features**	**Mitigative Features**	**Consequence**	**Frequency**	**Unmitigated Risk Conclusion**	
S-1	Room A-17, Analytical chemistry lab	Chemical (acid)	Nitric acid tank spill	Seismic event, vehicle impact	**Design:** Steel vessel Seismic mounting Cement barriers **Administrative:** Procedures, trained personnel, PPE	**Design:** Building ventilation to an elevated stack **Administrative:** Emergency response procedures, emergency response training, PPE	**Colocated Worker** Potentially C based on generic F at 1 m/sec Q-list **Public** Potentially C based on generic F at 1 m/sec Q-list	Marginal	Accident analysis is not required	
F-1	Outside Storage Shed C	Chemical (acid)	Fire in combustible building housing 300 kg of acid solution	Electrical short; thermal energy from electrical equipment, human error; unknown ignition source	**Design:** Electrical equipment design code, NFPA standard **Administrative:** Combustible material control, procedures, trained personnel	**Design:** None **Administrative:** Fire Department response, emergency operating procedures, trained personnel	**Colocated Worker** Potentially B based on generic F at 1 m/sec Q-list **Public** Potentially A based on generic F at 1 m/sec Q-list	Expected	Accident analysis is required	Thermal plume may produce acceptable risk results in accident analysis. Legacy inventory. Facility management preparing to remove most material.

Event CHEM-3: Spill of HCl containers throughout the facility due to a seismic event

Causes:	1. Natural Phenomena—seismic or wind event resulting in the direct or indirect application of mechanical energy.
Preventive Features:	**Design:** • Facility structure resistant to seismic and wind stresses. • Use of floor-mounted acid storage cabinets for hydrochloric acid. **Administrative:** • Operations consistent with the requirements of Part 14, "Chemicals," in the *ES&H Manual*. • Chemical hygiene plan as one specific element of Part 14. • Current inventory tracking via the ChemTrack system.
Mitigating Features:	**Design:** • Building ventilation provides for significant dilution of any airborne release both internally and by directing the release to a 38 m elevated stack. • Building shell provides a significant dilution and deposition volume for any airborne release after loss of power (e.g., seismic event). • Fire suppression system limits potential for fire growth and propagation. Administrative: • Facility and institutional emergency response plans.
Unmitigated consequences:	Per *ES&H Manual* Document 3.1, the overall facility quantities have the potential to exceed generic Q-list values. Therefore, the event is forwarded directly to accident analysis without ranking in the Analysis Level Matrix.
Probability:	Expected for an event doing little damage. Marginal or less for an event doing severe damage. **Note:** Facility seismic design, in current terms, generally correlates to Performance Category 2.
Comments:	Accident analysis is required.